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(54) Title: PERFUMED COMPOSITIONS AND METHODS FOR REDUCING BODY ODORS AND EXCESS MOISTURE

(57) Abstract

The present invention relates to a perfumed powder, odor and optionally moisture absorbing composition, which is safe for use on skin comprising from about 0.1 % to about 25 %, by weight of the composition, of uncomplexed cyclodextrin; from about 5 % to about 60 %, by weight of the composition, of a highly effective moisture absorber; a perfume composition selected from the group consisting of from about 0.05 % to about 15 %, by weight of the odor absorbing composition, of an encapsulated perfume, and from about 0.01 % to about 5 % by weight of the odor absorbing composition of a free perfume, and mixtures thereof, and a powder carrier. The compositions of the present invention may also contain an additional odor controlling agent selected from the group consisting of zeolite, activated charcoal, sodium bicarbonate, antimicrobial agents, and antiperspirants.

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PERFUMED COMPOSITIONS AND METHODS FOR REDUCING BODY ODORS AND EXCESS MOISTURE

BACKGROUND OF THE INVENTION

Body odor is most commonly caused by fatty acids on skin and by malodors from microbial sources. The human skin is naturally populated with numerous micro-organisms which are nourished by various skin secreted substances (eccrine and apocrine sweat, and sebum), skin cell debris, breakdown products of the skin and the organisms themselves. These unpleasant body odors are mainly organic molecules which have different structures and functional groups, such as amines, acids, alcohols, aldehydes, ketones, phenolics, polycyclics, indoles, aromatics, polyaromatics, etc. They can also be made up of sulfur-containing functional groups, such as, thiol, mercaptan, sulfide and/or disulfide groups.

Numerous attempts have been made to control or absorb body odors. Attempts have been made to deprive the microbials responsible for body odor of the moist/humid environment they need to proliferate and grow. Such efforts include the use of powders and/or antiperspirants. Body powders and powder-based compositions of the prior art have limited absorption capabilities. Antiperspirants are not always preferred in a body odor control product since, when used over the entire body, they may interfere with the body's thermal regulatory process by inhibiting perspiration through the action of astringent salts. Additionally, such salts may be irritating to a large number of users, particularly when applying them to sensitive areas such as the pelvic region.

Other deodorant compositions aimed at combating/controlling odor associated with skin secretions, which have been described in the chemical and cosmetic literature, include emulsion sticks or suspensoid sticks, aerosols, roll-ons, pads, pump sprays, and even soap bars. These known deodorants attempt to control odor through a variety of means. For instance, U.S. Patent No. 5,525,331, to Betts, issued June 11, 1996, discloses compositions which inhibit the growth of micro-organisms in the body-secretions. Deodorants may also include antibacterial compounds which help destroy/control the amount of bacteria present on skin, thereby minimizing odor produced via bacterial metabolism of skin secretions.

Zeolites are known odor absorbers. However, these solid odor absorbers, in addition to known activated charcoal odor absorbers, lose functionality when wet. Therefore, when wetted by body fluids or when carried in an aqueous solution, these

odor absorbers are not preferred as they lose their desired odor absorbent characteristics. Furthermore, zeolites can cause "harsh" feel if too much is deposited onto the skin.

In addition to the aforementioned attempts at controlling and/or absorbing body odor, numerous attempts have been made to mask body odors with other odors or perfumes. However, perfumes are often inadequate at fully concealing body odors and may be irritating to the user when used alone for odor control.

Thus, there remains a need for an improved, perfumed odor and moisture absorbing composition and methods of use thereof, which is essentially free of irritating, astringent antiperspirants and which is safe and effective for use on the entire body. More particularly, there is a need for a composition which is left on the skin and is capable of absorbing a broad spectrum of body odors and excess moisture that are not fully suppressed by the aforementioned means.

It has been discovered that such enhanced body odor and optionally moisture control can be safely provided to the entire body by applying a composition, which is left on the skin, which incorporates odor absorbing, uncomplexed cyclodextrins; highly effective moisture absorbing ingredients; perfume composition; and a powder carrier. Surprisingly, it has been discovered that perfume composition may be added without defeating the body odor absorption utility of the uncomplexed cyclodextrins. A particular advantage of the present invention is the ability to provide convenient, non-irritating odor and optionally moisture protection when applied to occluded skin areas such as the pelvic region, the external vagina, the panty-area, the bra-line, and skin-folds, which may be very sensitive. Moreover, it has been discovered that the aforementioned benefits may be delivered in a powder carrier which also optionally delivers skin aid benefits to the user such as protection and/or moisturization.

All percentages, ratios, and parts herein, in the Specification, Examples, and Claims are by weight unless otherwise stated. The term "g", as used herein, means gram. The term "ml", as used herein, means milliliter. The term "wt", as used herein, means weight.

SUMMARY OF THE INVENTION

The present invention relates to a perfumed powder, odor and moisture absorbing composition comprising from about 0.1% to about 25%, by weight of the composition, of uncomplexed cyclodextrin; optionally, from about 5% to about 60%, by weight of the composition, of a highly effective moisture absorber; a perfume composition selected from the group consisting of from about 0.05% to about 15%, by weight of the odor absorbing composition, of an encapsulated perfume, and from about 0.01% to about 5% by weight of the odor absorbing composition of a free

perfume, and mixtures thereof; and a powder carrier. The compositions of the present invention may also contain an additional odor controlling agent selected from the group consisting of zeolites, activated charcoal, sodium bicarbonate, antimicrobial agents, and antiperspirants. The present invention also relates to methods of using the above mentioned compositions.

DETAILED DESCRIPTION OF THE INVENTION

The present invention relates to a perfumed dry powder composition useful in reducing body odor and moisture from occluded skin sites. The present invention also relates to an article of manufacture comprising the compositions herein deposited on a flexible dispensing means. The composition of the present invention comprises dry ingredients preferably having particle sizes of from about 1 micron to about 100 microns; more preferred from about 1 micron to about 60 microns; and most preferred from about 1 micron to about 20 microns. As used herein, the particle size refers to the largest dimension of the particle and to the ultimate (or primary) particles.

The term "occluded skin", as used herein, refers to regions of a human or mammalian body covered by undergarments, such as the pelvic area, panty-area, and bra-line; and skin-folds or intertriginous regions, where there is continuing skin to skin contact. The term "excess moisture", as used herein, means an undesirable and/or unhealthy level of body fluids deposited on the skin. The term "body fluids", as used herein, includes eccrine sweat, apocrine sweat, sebum, build up of sensible moisture from transepidermal water loss, vaginal discharge, urine, and mixtures thereof. The term "body odor" as used herein means odors which are generated as a result of the natural functioning of a human or mammalian body. Such odors include, but are not limited to odors produced by microorganisms of the skin (i.e. bacterial decomposition of skin secretions), urine, or vaginal discharge, and mixtures thereof. The term "skin" means human or mammalian skin. The term "entire body" means the entire external surface of human or mammalian skin. The term "vaginal odor" relates specifically to those body odors which emanate from the pelvic region of a woman, particularly the vagina and the panty line.

A detailed description of essential and optional components of the present invention is given below.

CYCLODEXTRIN: As used herein, the term "cyclodextrin" includes any of the known cyclodextrins such as unsubstituted cyclodextrins containing from six to twelve glucose units, especially alpha-cyclodextrin, beta-cyclodextrin, gamma-cyclodextrin and/or their derivatives and/or mixtures thereof. The term "uncomplexed cyclodextrin" as used herein means that the cavities within the

cyclodextrin in the composition of the present invention should remain essentially unfilled prior to application to skin in order to allow the cyclodextrin to absorb various odor molecules when the composition is applied to the skin.

Preferred cyclodextrins for use in the present invention are alpha-cyclodextrin, beta-cyclodextrin, gamma-cyclodextrin and/or their derivatives. More preferred are beta cyclodextrin, hydroxypropyl alpha-cyclodextrin, hydroxypropyl beta-cyclodextrin, methylated-alpha-cyclodextrin or methylated-beta-cyclodextrin. Most preferred is beta-cyclodextrin.

It is also preferable to use a mixture of cyclodextrins. Such mixtures absorb body odors more broadly by complexing with a wider range of odoriferous molecules having a wider range of molecular sizes. The levels of cyclodextrin are from about 0.1% to about 25%, preferably from about 1% to about 20%, more preferably from about 2% to about 15%, most preferably from about 3% to about 10%, by weight of the composition.

The complexation between cyclodextrin and odorous molecules occurs rapidly when wetted with body fluids. This is convenient for the user because the cyclodextrins, while on dry skin, will not fill their cavities with other environmental odors which would otherwise render them less efficient for absorbing body odors. More particularly, upon solubilization of the cyclodextrins by the body fluids, the isolated cavities become available to form inclusion complexes with the body odor molecules. Thus, ultimately, the availability of solubilized uncomplexed cyclodextrin is essential for an effective and efficient odor control performance.

Cyclodextrins having small particle sizes aid in providing higher cyclodextrin surface availability for odor absorption and therefore are preferred. As used herein, the particle size refers to the largest dimension of the particle and to the ultimate (or primary) particles. Small particle cyclodextrins of this invention are those having a particle size of less than about 12 microns, preferably less than about 10 microns, and more preferably less than about 5 microns. A more complete description of the cyclodextrins, cyclodextrin derivatives, and cyclodextrin particle sizes useful in the present invention can be found in U.S. Patent No. 5,429,628, Trinh et al., issued July 4, 1995, which is incorporated herein by reference in its entirety.

HIGHLY EFFECTIVE MOISTURE ABSORBERS: Highly effective moisture absorbers are optionally included in the present invention to aid in reducing excess moisture on occluded skin and to increase the flowability (the ability to flow without caking due to moisture) of the compositions of the present invention. As used herein, the phrase "highly effective moisture absorbers" refers to silicas (silicon dioxide), silicates or carbonates wherein the silicates and carbonates are formed by reaction of

a carbonate or silicate with the alkali (IA) metals, alkaline earth (IIA) metals, or transition metals. Preferred highly effective moisture absorbers are calcium silicate, amorphous silicas, calcium carbonate, magnesium carbonate, or zinc carbonate, and mixtures thereof. Some specific examples of the silicates and carbonates useful in the present invention are more fully explained in Van Nostrand Reinhold's Encyclopedia of Chemistry, 4th Ed. pages 155, 169, 556, and 849, (1984), which is incorporated herein by reference.

Preferred are synthetic versions of the highly effective moisture absorbers, particularly in regards to silicas and silicates due to safety risks related to crystalline silica. Synthetic versions are formed by controlled chemical reactions in a manufacturing process rather than using a natural, mined version of these compounds which is then further refined. Synthetic carbonates useful in the present invention can be obtained from various suppliers such as Mallinckrodt or Whittaker, Clark, and Daniels. Examples of synthetic calcium silicates useful in the present invention are Hubersorb® 250 or Hubersorb® 600 available from J.M. Huber.

It is preferred that the highly effective moisture absorbers comprise from about 5% to about 60%; more preferred, from about 10% to about 50%; and most preferred, from about 20% to about 40% by weight of the total composition.

PERFUME COMPOSITION: Perfume is an essential component of the present invention and is included at a level which is non-irritating to the ordinary user's skin and/or respiratory tract, yet is discernible by the human sense of smell either before and/or after application to the skin. The perfume compositions should be safe for use on skin. The perfume compositions useful herein are comprised of perfume ingredients. The perfume compositions can be either in the form of free perfume, in the form of encapsulated perfume, or mixtures thereof. The perfume composition is typically present at a level of from about 0.01% to about 20% by weight of the odor absorbing composition.

Encapsulated Perfume: It is preferred that an effective amount, typically from about 0.05% to about 15%, preferably from about 0.1% to about 10%, more preferably from about 0.2% to about 8%, and even more preferably from about 0.5% to about 5%, by weight of the odor absorbing composition, be in the form of encapsulated perfume. Encapsulating perfume helps prevent premature loss of the perfume composition to the atmosphere as well as helping avoid strong odor which can be uncomfortable to the user. As used herein, the phrase "encapsulated perfume" refers to perfume compositions which are contained in or, preferably, encapsulated in a carrier. Examples of encapsulation means suitable for forming the encapsulated perfume herein include formation of cyclodextrin/perfume ingredient inclusion

complexes, coacervate encapsulation, cellular matrix encapsulation, crude formation of perfume-filled porous particles, and mixtures thereof. The encapsulated perfumes are preferably those which are released by a moisture activation mechanism whereby upon being wetted, e.g., by perspiration or other body fluids, the encapsulated perfume releases the perfume composition. Thus, skin irritation caused by perfume is minimized as encapsulated perfume is released only when wetted.

Cyclodextrin/perfume ingredient inclusion complexes are preferred not only because they display the preferred moisture activation release, but also for their effectiveness and ease of processing. Perfume loading in the cyclodextrin complex is fairly low, e.g., from about 10% to about 18% in beta-cyclodextrin/perfume complex. The cyclodextrin/perfume ingredient inclusion complexes, particle sizes, and methods of formation useful herein, are disclosed in detail in U.S. Patent No. 5,429,628, Trinh et al., issued July 4, 1995, which is incorporated herein by reference in its entirety. At least an effective amount of the cyclodextrin/perfume ingredient inclusion complex is to be applied to the odor absorbing compositions herein in order to deliver the desired levels of perfume composition. Effective amounts are typically in the range of from about 0.01% to about 10%, preferably from about 0.1% to about 3%, more preferably from about 0.2% to about 2%, by weight of the odor absorbing composition.

Coacervate perfume encapsulation is a commonly known encapsulation method wherein a droplet of one or more perfume ingredients is enclosed in a solid wall material. In cellular matrix perfume encapsulation, a solid particle contains many small droplets of one or more perfume ingredients stably held in the cells. Water-soluble (moisture-activated) cellular matrix perfume microcapsules which are preferred for use herein, and preparation thereof, are described in detail in U.S. Patent No. 5,429,628, Trinh et al., issued July 4, 1995, which is incorporated herein by reference in its entirety. Water-soluble cellular matrix perfume microcapsules useful in the present invention preferably have size of from about 0.5 micron to about 60 microns, more preferably from about 1 micron to about 50 microns, most preferably from about 2 microns to about 40 microns.

Coacervate perfume encapsulation and cellular matrix perfume encapsulation are preferred for their perfume loading which can be as high as 60%-80%. Effective amounts of coacervate and/or cellular matrix perfume microcapsules are typically in the range of from about 0.002% to about 6%, preferably from about 0.007% to about 1%, more preferably from about 0.01% to about 0.5%, by weight of the odor absorbing composition.

The crudely formed perfume-filled porous particles are used when a slow, continuous perfume composition release is desired. The perfume-filled porous particles are perfume ingredients/compositions which are more crudely embedded in a matrix and which release via diffusion. Starch matrix perfume-filled porous particles can be prepared according to the disclosure in U.S. Pat. 5,267,531, Appel et al., issued Dec. 7, 1993, which is incorporated herein by reference in its entirety. A nonlimiting example of useful porous particles, starch granules, are disclosed by Whistler et al., Food Technology, July 1994, pp. 104-105, incorporated herein by reference. The perfume-filled porous particles can be coated with suitable materials to improve perfume ingredient retention. The preferred particle size for the porous particle is from about 10 microns to about 60 microns, more preferably from about 15 microns to about 40 microns.

Preferably, the encapsulated perfume, whatever form it takes, is composed of perfume ingredients selected predominantly from two groups of ingredients, namely, (a) volatile perfume ingredients having a boiling point at normal pressure of less than about 260°C, more preferably less than about 250°C, and (b) ingredients having significant low odor detection threshold, and mixtures thereof. The boiling points of many perfume ingredients are given in, e.g., "Perfume and Flavor Chemicals (Aroma Chemicals)," Steffen Arctander, published by the author, 1969, incorporated herein by reference in its entirety. Typically, at least about 50%, preferably at least about 60%, more preferably at least about 70%, and most preferably at least about 80% by weight of the encapsulated perfume is composed of perfume ingredients of the above groups (a) and (b).

Nonlimiting examples of the more preferred volatile perfume ingredients are allo-ocimene, allyl caproate, allyl cyclohexaneacetate, allyl cyclohexanepropionate, allyl heptanoate, amyl acetate, amyl propionate, anethol, anisic aldehyde, anisole, benzaldehyde, benzyl acetate, benzyl acetone, benzyl alcohol, benzyl butyrate, benzyl formate, benzyl iso valerate, benzyl propionate, beta gamma hexenol, butyl benzoate, butyl caproate, 4-tert-butylcyclohexyl formate, camphene, camphor gum, carvacrol, laevo-carveol, d-carvone, laevo-carvone, cinnamyl formate, cis-jasmone, cis-3-hexenyl acetate, cis-3-hexenyl butyrate, cis-3-hexenyl caproate, cis-3-hexenyl tiglate, cis-3-hexenyl valerate, citral (neral), citronellol, citronellyl acetate, citronellyl formate, citronellyl isobutyrate, citronellyl nitrile, citronellyl oxyacetaldehyde, citronellyl propionate, cuminic alcohol, cuminic aldehyde, Cyclal C, cyclohexyl ethyl acetate, beta-damascone, 2-decenal, decyl aldehyde, dihydro myrcenol, dihydromyrcenyl acetate, dimethyl benzyl carbinol, dimethyl benzyl carbinyl acetate, dimethyl benzyl carbinyl propionate, dimethyl phenylethyl carbinyl acetate, 3,7-

dimethyloctanal, dimethyl octanol, diphenyl oxide, ethyl acetate, ethyl aceto acetate, ethyl amyl ketone, ethyl benzoate, ethyl butyrate, ethyl hexyl ketone, ethyl phenyl acetate, eucalyptol, fenchyl acetate, fenchyl alcohol, flor acetate (tricyclo decenyl acetate), frutene (tricyclo decenyl propionate), gamma methyl ionone, gamma-nonalactone, geraniol, geranyl acetate, geranyl acetoacetate, geranyl butyrate, geranyl formate, geranyl isobutyrate, geranyl nitrile, geranyl propionate, heptyl acetate, heptyl isobutyrate, heptyl propionate, hexenol, hexenyl acetate, hexenyl isobutyrate, hexyl acetate, hexyl formate, hexyl isobutyrate, hexyl isovalerate, hexyl neopentanoate, hexyl tiglate, hydratropic alcohol, hydroxycitronellal, alpha-ionone, beta-ionone, gamma-ionone, alpha-irone, isoamyl alcohol, isobornyl acetate, isobornyl propionate, isobutyl benzoate, isobutyl caproate, isononyl acetate, isononyl alcohol, isomenthol, isomenthone, isononyl acetate, isopulegol, isopulegyl acetate, isoquinoline, lauric aldehyde (dodecanal), lavandulyl acetate, ligustral, d-limonene, linalool, linalool oxide, linalyl acetate, linalyl butyrate, linalyl isobutyrate, linalyl formate, linalyl propionate, menthone, menthyl acetate, methyl acetophenone, methyl amyl ketone, methyl anthranilate, methyl benzoate, methyl benzyl acetate, methyl chavicol, methyl eugenol, methyl heptenone, methyl heptine carbonate, methyl heptyl ketone, methyl hexyl ketone, alpha-iso "gamma" methyl ionone, methyl nonyl acetaldehyde, methyl octyl acetaldehyde, methyl octyl ketone, methyl phenyl carbinyl acetate, methyl salicylate, myrcene, myrcenyl acetate, neral, nerol, neryl acetate, nonalactone, nonyl butyrate, nonyl alcohol, nonyl acetate, nonyl aldehyde, octalactone, octyl acetate, octyl alcohol (octanol-2), octyl aldehyde, orange terpenes (d-limonene), para-cresol, para-cresyl methyl ether, para-cymene, para-isopropyl para-methyl acetophenone, phenethyl anthranilate, phenoxy ethanol, phenyl acetaldehyde, phenyl ethyl acetate, phenyl ethyl alcohol, phenyl ethyl dimethyl carbinol, alpha-pinene, beta-pinene, alpha-terpinene, prenyl acetate, propyl butyrate, pulegone, rose oxide, safrole, alpha-terpinene, gamma-terpinene, 4-terpinenol, terpineol, terpinolene, terpinyl acetate, terpinyl propionate, tetrahydro linalool, tetrahydro myrcenol, thymol, delta-undecalactone, gamma-undecalactone, undecanal, undecenal, undecyl alcohol, Veratrol, Verdox, Vertenex, and viridine.

Nonlimiting examples of other preferred volatile perfume ingredients which can be used in perfume compositions of this invention are amyl benzoate, beta-caryophyllene, cinnamic alcohol, diphenyl methane, dodecalactone, ethyl methyl phenyl glycidate, eugenol, fenchyl acetate, gamma-n-methyl ionone, heliotropine, indole, isobutyl quinoline, Lilial (p-t-Bucinal), methyl-N-methyl anthranilate, para-methoxy acetophenone, phenethyl butyrate, phenyl heptanol, phenyl hexanol, and phenoxy ethyl proprionate.

Preferred encapsulated perfume composition contain at least 5, preferably at least 6, more preferably at least 7, and even more preferably at least 8 different volatile perfume ingredients. Most common perfume ingredients which are derived from natural sources are composed of a multitude of components. When each such material is used in the formulation of encapsulated perfume compositions of the present invention, it is counted as one single ingredient, for the purpose of defining the invention.

The use of small amounts of perfume ingredients that have low odor detection threshold values can improve perfume odor character, even though they are not as volatile as perfume ingredients of group (a) which are given hereinabove. The phrase "odor detection threshold" of an odorous material means the lowest vapor concentration of that material which can be olfactorily detected. The odor detection threshold and some odor detection threshold values are discussed in, e.g., "Standardized Human Olfactory Thresholds", M. Devos et al, IRL Press at Oxford University Press, 1990; and "Compilation of Odor and Taste Threshold Values Data", F. A. Fazzalari, editor, ASTM Data Series DS 48A, American Society for Testing and Materials, 1978, both of said publications being incorporated by reference. Perfume ingredients that do not belong to group (a) above, but have a significantly low odor detection threshold useful herein, are selected from the group consisting of ambrox dl, bacdanol, benzyl salicylate, calone, cetalox, cis-3-hexenyl salicylate, cymal, ebanol, ethyl anthranilate, ethyl methyl phenyl glycidate, ethyl vanillin, dihydro iso jasmonate, gamma dodecalactone, flor acetate, florhydral, frutene, heliotropine, alpha ionone, beta ionone, iso eugenol, alpha isomethylionone, lilial, lyral, methyl dihydrojasmonate, methyl beta naphthyl ketone, beta naphthol methyl ether, para hydroxy phenyl butanone, undecalactone gamma, vanillin., and mixtures thereof. These materials are preferably present at low levels in addition to the volatile ingredients of group (a), typically less than about 20%, preferably less than about 15%, more preferably less than about 10%, by weight of the perfume composition.

There are also volatile ingredients of group (a) that have a significantly low odor detection thresholds which are useful herein. Examples of these ingredients are allyl amyl glycolate, anethol, benzyl acetone, butyl anthranilate, cinnamic alcohol, cyclal C, cyclogalbanate, 4-decenal, ethyl-2-methyl butyrate, eugenol, damascenone, alpha damascone, fructone, herbavert, indole, iso cyclo citral, keone, linalool, methyl anthranilate, methyl heptine carbonate, methyl isobutenyl tetrahydropyran, methyl nonyl ketone, nerol, para anisic aldehyde, phenyl acetaldehyde, and undecylenic aldehyde.

Free Perfume: The perfume composition may also be in the form of a free perfume. The term "free perfume", as used herein, means a perfume composition which is not encapsulated. Where desired, the free perfume may be diluted in a solvent to aid in incorporation into the compositions herein. Suitable solvents include the skin aids disclosed herein and solvents found in the Cosmetic Bench Reference, 1994 Edition, page 54, which is incorporated herein by reference. Free perfume may be composed of conventional perfume ingredients at a level of from about 0.01% to about 5%, preferably from about 0.05% to about 3%, more preferably from about 0.05% to about 2%, and most preferably from about 0.1% to about 1%, by weight of the odor absorbing composition.

POWDER CARRIER: The cyclodextrins and highly effective moisture absorbers useful in the present invention should be dispersed in a pharmaceutically-acceptable powder carrier for convenient, uniform application and disbursement onto the skin. The term "pharmaceutically-acceptable", as used herein, means a powder suitable for topical use on the skin without undue toxicity, irritation, allergic response, and the like. The powder carrier also helps prevent any solubilized cyclodextrin from washing away from the desired skin contact. Powder carriers useful in the present invention include powders known in the art to be safe for human skin. Such powders include but are not limited to cornstarch (topical starch), talc, rice starch, oat starch, tapioca starch, microcrystalline cellulose (for example Avicel®), aluminum starch octenyl succinate (sold by National Starch & Chemical Co. as Dry Flo® Pure, Dry Flo® XT, and/or Dry Flo® PC), kaolin, and mixtures thereof. Preferred is cornstarch.

The powder carrier of the present invention will comprise from about 10% to about 95%, preferably from about 15% to about 80%, more preferably from about 25% to about 50%, by weight of the composition.

ADJUNCT ODOR CONTROLLING AGENTS: Optionally, the compositions of the present invention may comprise zeolites, carbon odor-controlling agents, sodium bicarbonates, antimicrobial agents and/or antiperspirant ingredients for added body odor control.

The term "zeolite", as used herein, refers to non-fibrous zeolites. When included in the present invention, zeolites may be present from about 0.1% to about 25%, preferably from about 1% to about 15%, by weight of the composition. A detailed description of zeolites useful in the present invention is found in U.S. Patent No. 5,429,628, Trinh et al., issued July 4, 1995, incorporated herein by reference in its entirety.

Carbon odor-controlling agents described in U.S. Patent No. 5,429,628 may be used in the present invention at a level of from about 0.1% to about 25%, by weight of the composition.

Alkali metal carbonate and/or bicarbonate salts, such as sodium bicarbonate, potassium bicarbonate, potassium carbonate, cesium carbonate, sodium carbonate, and mixtures thereof, may be added to the powder composition of the present invention in order to help to control acid-type odors. An example of sodium bicarbonate and its use as an underarm deodorant is found in U.S. Patent No. 4,382,079, to Marschner, issued May 3, 1983, which is incorporated herein in its entirety by reference. Preferred salts are sodium carbonate monohydrate, potassium carbonate, sodium bicarbonate, potassium bicarbonate, and mixtures thereof. Alkali metal carbonate and bicarbonate salts are typically present at a level of from about 0.1% to about 30%, preferably from about 0.2% to about 20%, more preferably from about 0.3% to about 10%, by weight of the powder composition.

The antimicrobial agents of the present invention are selected from a group consisting of antibacterial agents, antifungal agents, and mixtures thereof. Antimicrobial agents help destroy and/or control the amount of bacteria and/or fungi present on the skin. Preferred antimicrobial agents are zinc phenolsulfonate, zinc oxide, triclosan, Zelec® AM by DuPont, zinc ricinoleate, zinc undecylenate, and mixtures thereof. More preferred are zinc phenolsulfonate, zinc oxide, and triclosan. Triclosan is available from Ciba-Geigy as Irgasan DP-300. Examples of antimicrobial agents useful in the present invention are found in the Cosmetic Bench Reference, 1994 Edition, page 10, which is incorporated herein by reference. When included in the present invention, the antimicrobials are at a level of from about 0.01% to about 25%. Preferably from about 0.1% to about 10%, by weight of the present composition.

When used on the underarms, antiperspirant ingredients may be included in the present invention. Examples of antiperspirants known in the art are found in the Cosmetic Bench Reference, 1994 Edition, page 13, which is incorporated herein by reference. When included in the present invention, antiperspirants may be present from about 0.1% to about 25%, by weight of the composition.

SKIN AIDS: The compositions of the present invention also optionally include skin aids. The term "skin aids", as used herein, refers to skin protectants, emollients, and moisturizers.

Skin protectants useful in the present invention are found in the Cosmetic Bench Reference, 1994 Edition, page 53; and the Monograph on Skin Protectant Drug Products for Over-the-Counter Human Use, 21 CFR 347. Preferred skin

protectants are corn starch, kaolin, mineral oil, sodium bicarbonate, dimethicone, zinc oxide, colloidal oatmeal, and mixtures thereof. When present, the skin protectants comprise from about 0.1% to about 80%, preferably from about 0.1% to about 30%, most preferably from about 0.1% to about 10%, by weight of the composition.

Emollients and moisturizers useful in the present invention can be found in the Cosmetic Bench Reference, 1994 Edition, pages 27-32 and 46-48, incorporated herein by reference. Preferred emollients and moisturizers are tocopherol, tocopheryl acetate, aloe, vegetable oils, mineral oil, petrolatum, jojoba oil, and mixtures thereof. More preferred are encapsulated or spray/freeze dried emollients. The use of spray/freeze dried or encapsulated emollients keeps the emollients protected in the powder carrier until they are released through shearing (such as rubbing against undergarments or clothes) or through contact with skin moisture. Examples of preferred commercial spray/freeze dried aloe useful in the present invention are Terra-Dry™ Freeze Dried Aloe, Terra-Pure™ Freeze or Spray Dried Aloe, and Terra-Spray ™ Spray Dried Aloe, all from Terry Laboratories. When present, the emollients/moisturizers comprise from about 0.1% to about 50%, preferably from about 0.1% to about 25%, most preferably from about 0.1% to about 10%, by weight of the composition.

SLIP COMPOUNDS: The present compositions may optionally comprise slip compounds. The term "slip compounds", as used herein, refers to compounds which have unique structures which provide enhanced slip/lubrication characteristics of powders and/or reduced skin to skin friction between intertriginous skin sites.

Slip compounds of the present invention include polyethylene; nylon; polytetra-fluoroethylene; silica which is in the form of microspheres, ellipsoids, barrel-shapes, and the like; mica, silicone (e.g. dimethicone) and metallic stearates (e.g. zinc stearate); and mixtures thereof. Preferred slip compounds are silicas which are in the form of microspheres, ellipsoids, barrel-shapes, and the like. Silica ellipsoids useful in the present invention are available from DuPont as ZELEC® Sil. Silica microspheres are available from KOBO as MSS-500, MSS 500/3, MSS-500/H, MSS-500/3H, MSS-500/N, and MSS-500/3N. Additionally, it is preferred that some of the silica of the present invention be fumed silica for increased flowability of the powder in addition to enhancing the slip characteristics. Fumed silica is available from Cabot Corporation (Cab-O-Sil®) and from Degussa (Aerosil®). When present in the compositions of the invention, the slip compounds comprise from about 0.1% to about 35% , preferably from about 1% to about 10%, by weight of the composition.

BINDERS: The present invention may optionally also include dry or wet binders to help promote adhesion of the powder and active ingredients to the skin. Binders useful in the present invention are found in the Cosmetic Bench Reference, 1994 Edition, pages 13-14, which is incorporated herein by reference. Preferred binders are calcium stearate, zinc stearate, isopropyl myristate, magnesium myristate, silicone, and mixtures thereof. More preferred are zinc stearate, dimethicone, and mixtures thereof. When included in the composition, the binders are at a level of from about 0.1% to about 25%, preferably from about 1% to about 15%, by weight of the composition.

ANTI-PRURITIC AGENTS: Anti-pruritic agents such as those known in the art may be included in the compositions of the present invention. Examples of anti-pruritic agents useful in the present invention are Magnesium-L-Lactate, hydrocortisone, hydrocortisone acetate, and colloidal oatmeal. A description of anti-pruritic agents are found in the Handbook of Non Prescription Drugs, 10th Edition, p. 529, 1993; which is incorporated herein by reference. When included in the composition, anti-pruritic agents may be present from about 0.1% to about 40%, by weight of the composition.

COLORANTS: Colorants and dyes can be optionally added to the odor absorbing compositions for visual appeal and performance impression. Colorants suitable for use in the present invention are found in the Cosmetic Bench Reference, 1994 Edition, pages 21-22, which is incorporated herein by reference.

PROCESS OF MAKING COMPOSITIONS

The compositions of the present invention are prepared by the following steps: creating a mixture by mixing cyclodextrin, any highly effective moisture absorbers, and optional ingredients in a powder carrier via a commercially available mixer such as a vee-blender, double cone blender, or ribbon blender until the mixture is uniform; and creating a reduced size mixture using a commercially available size reduction technique such as hammer milling, impact milling, ball milling, or fluid energy milling until the desired particle size distribution is achieved.

Perfume composition, whether encapsulated or free, may be added to the present compositions in many different ways. One suitable method of including encapsulated perfume involves forming cyclodextrin complexes in the manner described in U.S. Patent 5,429,628, to Trinh et al., issued July 4, 1995, which is incorporated herein by reference, and blending the perfume/cylcodextrin complexes with the composition above in a final or in an intermediate step. Where desired, free perfume may be incorporated by spraying the cyclodextrin, carrier, or any of the powder ingredients with the free perfume. Preferably, the free perfume is blended

with one or more of the liquid ingredients herein, such as the skin aids, prior to the spraying.

Since the compositions of the present invention are to be applied directly to the skin or hair, various applicators are useful for delivering the compositions to the entire body for maximum odor control. For example, the compositions are preferably deposited in a bottle, a canister, a spray dispenser, a manually activated spray dispenser, or on a wipe structure which later is contacted with the skin to transfer the composition to the skin. Bottles and canisters known in the art are suitable for use in delivering the compositions of the present invention. Bottles and canisters preferably comprise lids with small apertures for convenient dispensing of the composition.

The composition of the present invention can also be delivered as a suspended solution via a spray dispenser or a bottle, such that when applied or sprayed onto the skin, the solvent would immediately dry/volatilize off to leave a powder film. Examples of such suspension forms are aerosols, liquid powder suspensions, or silicone suspensions. When present in an aerosol composition, the powders of the present invention will usually be present in the range of from about 0.1% to about 15%, by weight of the composition. The incorporation of a powder into an aerosol is more fully explained in U.S. Patent No. 4,078,051, to Pomot et al., issued March 7, 1978; which is incorporated herein by reference in its entirety. This method is not preferred however for use on sensitive areas of the body such as the panty-area or other occluded skin areas since skin irritations may result from propellants commonly used in aerosol containers.

Preferred is a manually activated spray dispenser which delivers the composition as a powder without the use of propellants, and without the composition being in a solution form. Spray dispensers useful herein are described more fully in U.S. Patent No. 2,450,205, to Rose, issued September 28, 1948; and U.S. Patent No. 2,840,277, to Bach, issued June 24, 1958, both of which are incorporated herein by reference in their entireties.

Any wipe structures and/or methods of making the wipe structures commonly known in the art may be used. The wipe comprises a flexible dispensing means. The term "flexible dispensing means", as used herein, includes papers, cloths, non-wovens, films, foams, sponges, rollers, pads, tissues, cotton balls, and the like. Preferred wipe substrates comprise a porous material, such as the non-woven substrates, foams, or sponges, which are capable of holding the composition within the pores of the substrates. Examples of cellulosic non-wovens are described in U.S. Patent Number 4,191,609, Trokhan, issued March 4, 1980, which is incorporated herein by reference in its entirety.

Techniques for combining the wipe substrates with the composition of the present invention are well known in the art. Examples of common techniques include coating, immersing, dipping, sprinkling, or spraying, the wipe substrate with the compositions herein. The composition of the present invention is added to the wipe substrate at a level sufficient to provide the desired odor control and/or other desired skin benefits.

Packages suitable for use herein are any commonly known in the art and include resealable packages and those suitable for one time use.

METHODS OF USE

The present invention also encompasses a method of reducing body odor comprising the application of an effective amount of the compositions described herein to skin. The present invention also encompasses a method of reducing vaginal odor comprising applying an effective amount of the compositions described herein onto a pelvic region, external vagina, and/or panty-area. However, the compositions of the present invention should not be inserted into the vagina, nor applied onto the vulva. An "effective amount" of the compositions of the present invention, as used herein, means an amount sufficient to absorb body odor so that it is less noticeable by the human sense of smell. While the determination of an effective amount used and the number of uses per day is ultimately left to the discretion of the user, typically an effective amount will be from about 1 cc (cubic centimeter) to about 3 cc of odor absorbing composition per use, applied about 1 to about 3 times daily, for as many days as desired by user.

The compositions herein are topically applied directly to the skin or hair. The compositions can be delivered by placing the composition into a dispensing means and applying an effective amount via spraying, sprinkling, shaking, or rubbing the composition onto the desired skin surface; typically the entire body. Preferably the dispensing means is a sprinkling canister, a spray bottle, or a pre-formed wipe which comprises a flexible dispensing means.

Alternatively, the user may deposit the composition herein onto a wipe comprising a flexible dispensing means of his or her own choosing. To do this, the user chooses a flexible dispensing means such as a washcloth or puff; transfers the composition from a bottle or other suitable container over the chosen flexible dispensing means, and applies the composition to the desired area of the body. The user may also use his/her hand to apply the compositions. The user may use as much or as little of the composition as he/she desires, depending upon their intended use and degree of odor control necessary.

The following non-limiting examples illustrate useful perfume compositions and odor absorbing composition formulations along with methods of use of the present invention. Perfume compositions A-G are all useful for formulating as encapsulated perfume. Perfume compositions E-G may also, optionally, be used as free perfume.

PERFUME COMPOSITION A

Ingredients	Wt.%
Ambrox dl 10% in DPG	1.5
Benzyl acetate	1.9
Benzyl salicylate	3.1
beta gamma Hexenol	0.4
cis 3 Hexenyl acetate	0.5
cis-3-Hexenyl salicylate	2.5
Citronellal nitrile	1.5
Citronellol	9.2
Cyclal C	0.9
Cyclo galbanate	0.5
Dihydro myrcenol	0.9
Ebanol	0.1
Eucalyptol	0.6
Eugenol	0.5
Flor acetate	8.3
Frutene	4.0
Geranyl nitrile	0.3
Hexyl cinnamic aldehyde	10.5
Hydroxycitronellal	2.3
iso Bornyl acetate	0.2
iso Cyclo geraniol	0.6
Linalool	1.9
Linalyl acetate	4.2
Methyl cedrylone	0.2
Methyl dihydro jasmonate	0.9
Methyl iso butenyl tetrahydro pyran	0.3
Methyl phenyl carbinyl acetate	0.9
Orange terpenes	17.6
P.T.Bucinal	17.8
Phenyl ethyl alcohol	4.6
Prenyl acetate	1.2

PERFUME COMPOSITION B

Ingredients	Wt.%
Benzyl acetate	2.4
Cinnamic alcohol	0.1
cis 3 Hexenyl acetate	0.3
cis Jasmone	0.4
Citronellol	4.1
Citronellyl acetate	1.3
Dimethyl octanol	1.6
Ethyl linalool	7.3
Flor acetate	4.9
Frutene	3.3
Geraniol	4.9
Helional	4.1
Hexyl cinnamic aldehyde	16.0
Hydroxycitronellal	1.6
Ionone gamma methyl	5.7
iso E Super	4.1
Lyral	3.3
Methyl dihydro jasmonate	16.2
Methyl phenyl carbinyl acetate	0.3
P. T. Bucinal	8.9
Phenyl ethyl alcohol	4.9
Phenyl hexanol	0.8
Terpineol	3.3
Undecylenic aldehyde	0.2

PERFUME COMPOSITION C

Ingredients	Wt.%
4-tertiary Butyl cyclohexyl acetate	10.0
Bacdanol	0.5
Cetalox	0.1
Citral	1.0
CitronelloL	5.0
Damascenone	0.3
Dihydro myrcenol	1.0
Dimethyl benzyl carbinyl acetate	1.5
Ethyl vanillin	0.5
Geraniol	2.0
Geranyl nitrile	0.5
Heliotropin	5.1
Hexyl cinnamic aldehyde	15.4
Ionone gamma methyl	3.2
iso E Super	3.5
Linalyl acetate	8.1
Methyl anthranilate	1.5
Methyl dihydro jasmonate	20.0
Methyl iso butenyl tetrahydro pyran	0.1
Orange terpenes	10.0
para Methoxy acetophenone	0.4
Vanillin	10.3

PERFUME COMPOSITION D

Ingredients	Wt.%
4-tertiary Butyl cyclohexyl acetate	12.3
Ambrox DL 10% in DPG	1.6
Anisic aldehyde	4.5
Bacdanol	0.6
cis Jasmone	0.1
Citronellol	6.2
Ethyl cinnamate	1.3
Ethyl vanillin	1.7
Eugenol	0.4
Geraniol	12.3
Geranyl acetate	1.2
Heliotropin	12.3
Hexyl cinnamic aldehyde	12.3
Ionone methyl	3.5
iso Bornyl acetate	1.7
iso Eugenol	0.3
Lauric aldehyde	1.2
Menthyl acetate	0.7
Methyl anthranilate	1.5
Methyl cinnamate	1.2
Methyl phenyl carbinyl acetate	2.7
Phenyl ethyl alcohol	12.3
Undecalactone	0.6
Undecylenic aldehyde	0.6
Vanillin	6.9

PERFUME COMPOSITION E

Ingredients	Wt.%
Citronellol	10
Benzyl salicylate	15
Benzyl acetate	10
Benzophenone	3
Cedrol	2
Dihydromyrcenol	10
Flor acetate	5

PERFUME COMPOSITION F

Ingredients	Wt.%
Benzyl salicylate	20
Benzyl acetate	15
Benzophenone	5
Phenyl ethyl alcohol	10
Linalool	15
Methyl dihydro jasmonate	10
Lilial	15

Phenyl ethyl alcohol	15	Phenyl ethyl acetate	5
Linalyl acetate	4		
Linalool	6		
Methyl dihydro jasmonate	3		
Lilial	10		
Phenyl ethyl acetate	2		
alpha-Terpineol	5		

PERFUME COMPOSITION G

Ingredients	Wt.%
Citronellol	5
Benzyl salicylate	5
Benzyl acetate	5
Dihydromyrcenol	5
Flor acetate	5
Phenyl ethyl alcohol	20
Linalyl acetate	5
Linalool	5
Methyl dihydro jasmonate	5
Lilial	20
Phenyl ethyl acetate	1
Vanillin	6
alpha-Terpineol	8
Anisic aldehyde	2
Cymal	3

EXAMPLE I

Ingredient	%W/W
Corn Starch (Topical Starch)	35.55
Silica (Microspheres)	10.00
Magnesium Carbonate	8.00
Calcium Silicate, Synthetic	20.00
Fumed Silica	5.00

EXAMPLE II

Ingredient	%W/W
Corn Starch (Topical Starch)	12.20
Talc	10.00
Silica (Microspheres)	10.00
Fumed Silica	5.00
Zinc Phenolsulfonate	3.00

Zinc Phenolsulfonate	3.00
Triclosan	0.20
Nylon-12	3.00
Zinc Stearate	3.00
Beta Cyclodextrin	3.00
Aloe Vera Freeze/Spray Dried	0.10
Tocopheryl Acetate Microcapsules	2.00
Dipropylene Glycol	2.00
Free Perfume**	0.15
Dimethicone	5.00

Example I may also comprise an anti-pruritic agent such as Magnesium-L-Lactate.

Triclosan	0.30
Cyclodextrin	6.00
Aloe Vera, Freeze/Spray Dried	0.50
Magnesium Carbonate	8.00
Nylon-12	5.00
Calcium Silicate	20.00
Zinc Stearate	3.00
Tocopheryl Acetate Microcapsules	2.00
Mineral Oil	2.00
Dimethicone	5.00
Encapsulated Perfume*	8.00

Example II may also comprise a zeolite.

EXAMPLE III

Ingredient	%W/W
Rice Starch	25.00
Mica	2.00
Silica (Ellipsoids)	14.50
Fumed Silica	5.00
Triclosan	0.10
Aluminum Chlorohydrate	5.00
Cyclodextrin	6.00
Aloe Vera, Freeze/Spray Dried	1.00
Calcium Carbonate	10.00
Polyethylene Powder	3.00
Calcium Silicate	10.00
Zinc Stearate	7.00
Dimethicone	10.00
Encapsulated Perfume*	1.00
Free Perfume**	0.40

Example III may also comprise a colorant.

EXAMPLE IV

Ingredient	%W/W
Aluminum Starch Octenyl Succinate	12.40
Silica (Ellipsoids)	8.00
Fumed Silica	8.00
Zinc Phenolsulfonate	7.00
Triclosan	0.60
Cyclodextrin	10.00
Aloe Vera Gel/Oil	1.00
Magnesium Carbonate	7.00
Calcium Carbonate	3.00
Polyethylene Powder	7.00
Calcium Silicate	15.00
Zinc Stearate	5.00
Mineral Oil	5.00
Dimethicone	6.00
Encapsulated Perfume*	4.00
Free Perfume**	1.00

EXAMPLE V

Ingredient	%W/W
Tapioca Starch	10.00
Talc	4.90
Silica (Microspheres)	20.00
Fumed Silica	2.00
Zinc Oxide	4.00
Triclosan	1.00
Cyclodextrin	4.00
Aloe Vera Gel/Oil	2.00
Magnesium Carbonate	5.00
Calcium Carbonate	4.00
Nylon-12	10.00
Calcium Silicate	15.00
Zinc Stearate	6.00
Isopropyl Myristate	4.00
Dimethicone	5.00
Encapsulated Perfume*	3.00
Free Perfume**	0.10

EXAMPLE VI

Ingredient	%W/W
Corn Starch (Topical Starch)	10.00
Oat Flour/Colloidal Oatmeal	8.35
Silica (Microspheres)	5.00
Silica (Ellipsoids)	10.00
Fumed Silica	5.00
Zinc Oxide	2.00
Triclosan	0.40
Cyclodextrin	5.00
Aloe Vera Gel/Oil	2.00
Magnesium Carbonate	4.00
Calcium Carbonate	5.00
Nylon-12	4.00
Polyethylene Powder	4.00
Calcium Silicate	10.00
Zinc Stearate	10.00
Tocopheryl Acetate Mircocapsules	5.00
Dimethicone	10.00
Free Perfume**	0.25

Example VI may also comprise sodium bicarbonate.

EXAMPLE VII

Ingredient	%W/W
Corn Starch	6.80
Kaolin	4.00
Silica (Microspheres)	5.00
Silica (Ellipsoids)	5.00
Fumed Silica	5.00
Zinc Phenolsulfonate	2.00
Triclosan	0.20
Cyclodextrin	8.00
Aloe Vera Gel/Oil	3.00
Magnesium Carbonate	10.00
Nylon-12	2.00
Polyethylene Powder	5.00
Calcium Silicate	25.00
Zinc Stearate	7.00

EXAMPLE VIII

Ingredient	%W/W
Corn Starch (Topical Starch)	43.10
Silica (Microspheres)	30.00
Zinc Phenolsulfonate	3.00
Triclosan	0.30
Nylon-12	10.00
Beta Cyclodextrin	3.00
Tocopheryl Acetate Microcapsules	5.00
Dipropylene Glycol	0.30
Free Perfume**	0.30
Dimethicone	5.00

Tocopheryl Acetate Microcapsules	3.00
Isopropyl Myristate	2.00
Dimethicone	5.00
Encapsulated Perfume*	2.00

EXAMPLE IX

Ingredient	%W/W
Corn Starch (Topical Starch)	47.50
Silica (Microspheres)	40.00
Triclosan	0.30
Zinc Stearate	3.00
Beta Cyclodextrin	3.00
Dipropylene Glycol	0.60
Free Perfume**	0.60
Dimethicone	5.00

EXAMPLE X

Ingredient	%W/W
Corn Starch (Topical Starch)	60.80
Silica (Microspheres)	2.00
Fumed Silica	2.00
Zinc Phenolsulfonate	3.00
Triclosan	.20
Cyclodextrin	3.00
Aloe Vera, Freeze/Spray Dried	1.00
Nylon-12	5.00
Zinc Stearate	7.00
Tocopheryl Acetate Microcapsules	2.00
Dimethicone	10.00
Encapsulated Perfume*	4.00

Example X may also comprise a colorant.

EXAMPLE XI

Ingredient	%W/W
Corn Starch (Topical Starch)	50.00
Talc	10.00
Silica (Microspheres)	3.00
Fumed Silica	1.00
Zinc Phenolsulfonate	3.00
Triclosan	0.30
Cyclodextrin	13.00
Aloe Vera, Freeze/Spray Dried	0.50
Nylon-12	5.00
Zinc Stearate	3.00
Tocopheryl Acetate Microcapsules	2.00
Mineral Oil	2.00
Dimethicone	5.00
Free Perfume**	0.20
Encapsulated Perfume*	2.00

Example VI may also comprise a zeolite.

EXAMPLE XII

Ingredient	%W/W
Rice Starch	51.00
Mica	2.00
Silica (Ellipsoids)	2.00
Fumed Silica	1.00
Triclosan	0.50
Aluminum Chlorohydrate	5.00
Cyclodextrin	6.00
Aloe Vera, Freeze/Spray Dried	1.00
Polyethylene Powder	5.00
Zinc Stearate	5.00
Tocopheryl Acetate Oil (Vit. E. Acetate)	3.00
Dimethicone	10.00
Nylon N-12	5.00
Free Perfume**	0.50
Encapsulated Perfume*	3.00

Example VII may also comprise a zeolite.

EXAMPLE XIII

Ingredient	%W/W
Aluminum Starch Octenyl Succinate (Dry Flo®Pure)	30.20
Silica (Ellipsoids)	4.00
Zinc Phenolsulfonate	7.00
Triclosan	0.60
Cyclodextrin	10.00
Aloe Vera Gel/Oil	1.00
Zeolite	10.00
Talc	13.60
Polyethylene Powder	7.00
Zinc Stearate	5.00
Mineral Oil	5.00
Dimethicone	6.00
Free Perfume**	0.60

EXAMPLE XIV

Ingredient	%W/W
Tapioca Starch	46.50
Talc	4.90
Silica (Microspheres)	2.50
Fumed Silica	2.00
Zinc Oxide	4.00
Triclosan	1.00
Cyclodextrin	4.00
Aloe Vera Gel/Oil	2.00
Nylon-12	10.00
Zinc Stearate	6.00
Isopropyl Myristate	4.00
Dimethicone	5.00
Free Perfume**	0.10
Encapsulated Perfume*	8.00

EXAMPLE XV

Ingredient	%W/W
Corn Starch (Topical Starch)	29.00
Oat Flour/Colloidal Oatmeal	16.35
Silica (Microspheres)	2.50
Silica (Ellipsoids)	1.50
Kaolin	8.00
Zinc Oxide	2.00
Triclosan	0.40
Cyclodextrin	5.00
Aloe Vera Gel/Oil	2.00
Nylon-12	4.00
Polyethylene Powder	4.00
Zinc Stearate	10.00
Tocopheryl Acetate Mircocapsules	5.00
Dimethicone	10.00
Free Perfume**	0.25

EXAMPLE XVI

Ingredient	%W/W
Corn Starch (Topical Starch)	49.00
Kaolin	14.50
Silica (Microspheres)	2.50
Silica (Ellipsoids)	1.50
Fumed Silica	0.50
Zinc Phenolsulfonate	2.00
Triclosan	0.20
Cyclodextrin	8.00
Aloe Vera Gel/Oil	3.00
Nylon-12	2.00
Polyethylene Powder	5.00
Tocopheryl Acetate Microcapsules	3.00
Isopropyl Myristate	2.00
Dimethicone	5.00
Free Perfume**	0.80
Encapsulated Perfume*	1.00

*Any encapsulated perfume in Examples I-XVI may comprise any of the above Perfume Compositions of Examples A-G.
**Any free perfume in Examples I-XVI may comprise any of the above Perfume Compositions of Examples E-G.

Prepare the above Examples by the following steps: create a first mixture by mixing cyclodextrin, dry ingredients, and a powder carrier in a commercially available mixer such as a vee-blender, double cone blender, or ribbon blender until the mixture is uniform; reduce the particle size of the mixture using a grinding/pulverizing technique such as hammer milling, impact milling, ball milling, or fluid energy milling; and create a second mixture by adding any liquid phase emollients, moisturizers, and/or skin protectants to the mixture, preferably using spray atomization while mixing for a more even dispersion. The second mixture can then undergo a second pulverizing/grinding step, and if desired, an air classifying operation. Where the above Examples include free perfume compositions, creating the second mixture may include the addition of the perfume compositions into the liquid phase. Where the above Examples include encapsulated perfume, the encapsulated perfume may be added with the dry ingredients when creating the first mixture; or, preferably, may be added in a final step of creating a third mixture by adding the encapsulated perfume to the second mixture with mixing.

Preparation for Application to Skin: The compositions of the present invention, such as those formed from the examples may be loaded onto a wipe or deposited into a spray device or canister. The compositions may be applied directly onto the skin or onto a flexible dispensing means of the user's choosing for convenient application to the skin. To prepare wipes, coat, sprinkle, or spray the composition onto a dry flexible dispensing means until desired coating or thickness of composition on the flexible dispensing means is achieved. To prepare spray, deposit the composition into the selected spray package. Close the package for storage until consumer use. To prepare a pressurized aerosol spray, transfer the composition into a suitable container. Pressurize and seal the container after injection of propellant materials.

Example XVII A woman with stress urinary incontinence finds that the wetness associated with this condition causes vaginal odor which she wants to remove from the skin and control. After urinating, the woman wipes her external vagina and pelvic region with a wipe containing the composition in Example X. This woman notices less vaginal odor after using the wipe.

Example XVIII A large-breasted, obese woman finds that when she exercises, she tends to experience sweating and skin chafing under the breasts. Before and after exercising, she applies the composition from Example III or IX via a manual spray bottle. She sprays the perfumed composition under her breasts. The woman also applies the composition into intertriginous regions between her abdominal skin folds as well as other occluded skin sites. She notices less body odor and excess moisture after using the powder spray.

Example XIX A man has severe allergies to cosmetic deodorants, antiperspirants, and heavy colognes and avoids using such products. This results in uncontrolled and embarrassing body odor. His doctor suggests applying the mild, lightly perfumed odor absorbing composition of Example I or XV after showering. The man applies the composition to his entire body via a spray each morning after showering, and suffers no allergic reaction. The man feels comfortable without the embarrassment of lingering, uncontrollable body odor. The man keeps a pouch of wipes which also contain the composition of Example I or XV, for convenient and discreet reapplication as needed.

What is claimed is:

1. An odor absorbing composition comprising:
   a. from 0.1% to 25%, by weight of the composition, of uncomplexed cyclodextrin;
   b. a perfume composition selected from the group consisting of from 0.05% to 15%, by weight of the composition, of an encapsulated perfume, from 0.01% to 5%, by weight of the composition, of free perfume; and mixtures thereof; and
   c. a powder carrier;

wherein the encapsulated perfume comprises one or more volatile perfume ingredients each having a boiling point of less than about 260°C, ingredients having significant low detection threshold values, and mixtures thereof.

2. The composition of Claim 1 further comprising from 5% to 60%, by weight of the composition, of a highly effective moisture absorber.

3. The composition of Claim 2 wherein the highly effective moisture absorbers are selected from the group consisting of silicates, silicas, and carbonates.

4. The composition according to any one of the preceding Claims wherein the cyclodextrin is selected from the group consisting of beta-cyclodextrin, derivatives of beta-cyclodextrin, alpha-cyclodextrin, derivatives of alpha-cyclodextrin, gamma-cyclodextrin, derivatives of gamma-cyclodextrin, and mixtures thereof.

5. The composition according to according to any one of the preceding Claims wherein particle sizes are from 1 micron to 100 microns.

6. The composition according to any one of the preceding Claims wherein particle sizes of the cyclodextrin are from 1 micron to 12 microns.

7. The composition according to any one of the preceding Claims further comprising optional ingredients selected from the group consisting of zeolites, activated charcoal, sodium bicarbonate, antimicrobial agents, antiperspirants, skin protectants, emollients, moisturizers, and slip compounds.

8. A pre-formed wipe composition wherein the composition according to any one of the preceding Claims is deposited on a wipe which comprises a flexible dispensing means.

9. The composition according to any one of the preceding Claims delivered as a powder by a manually activated spray dispenser.

10. The use of the compositions according to any one of the preceding Claims for the manufacture of an odor and moisture absorbing composition, which is safe for use on skin, wherein the composition is applied onto skin for reducing body odor and/or vaginal odor.

11. The use according to Claim 10 wherein the composition is applied onto a pelvic region, an external vagina, and/or a panty line.

12. The use according to Claims 10 or 11 wherein the composition is applied to the skin using a manually activated spray dispenser.

13. A process for making an odor and moisture absorbing composition comprising the steps of:

a. making a first mixture by mixing a powder carrier, highly effective moisture absorbers, and cyclodextrin in a commercially available mixer until uniform;

b. creating a reduced size mixture by applying a commercially available size reduction technique to the first mixture until a desired particle size distribution is achieved; and

c. creating a perfumed powder composition by spraying the reduced size mixture with free perfume and mixing.

INTERNATIONAL SEARCH REPORT

Inte ional Application No
PCT/US 98/11811

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61K7/48 A61K7/46

According to International Patent Classification(IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	US 5 780 020 A (PETERSON, L. ET AL.) 14 July 1998 see claims 1-16	1-7,9-13
P,X	US 5 714 445 A (TRINH, T. ET AL.) 3 February 1998 see claims 1-6,10-15	1-7,9-13

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

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"P" document published prior to the international filing date but later than the priority date claimed

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
12 October 1998	21/10/1998

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INTERNATIONAL SEARCH REPORT

Information on patent family members

Inte ional Application No
PCT/US 98/11811

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